

Actinometric probe

Item : 002417



Main features

- Precise temperature measurement
- 4 wires
- In accordance with WMO
- Easy to calibrate

The actinometric probe is a temperature probe installed at 10 cm above the ground surface. It allows to measure the thermal exchanges between the atmosphere, the sun and the soil. It allows to anticipate the appearance of negative temperatures during the night, potentially destructive for some crops such as vines.

The actinometric probe allows to measure precisely the air temperature above the ground

Measurement principle

The actinometric probe is a resistive probe (RTD) with a measurement principle based on the properties of platinum. Platinum has a linear, repeatable and reliable temperature/resistance ratio. At 0°C, the resistance value of the platinum wire is 100Ω.

4 Wires

To minimize measurement errors, the actinometric probe employs a 4-wire configuration using Pt100 sensors. This approach is preferred over 2 and 3-wire Pt100 systems, as it reduces potential inaccuracies.

Several Pt100 can be connected to the PULSONIC datalogger (P4-100) to measure temperature at multiple levels.

Calibration

The actinometric probe can be easily calibrated in an oven. Being waterproof, it can also be calibrated in an oil bath, a solution generally less expensive and more accurate.

Automatic

The P4-100 datalogger regularly takes temperature measurements, centralizes them and communicates them to the central server.

Technical characteristics

General

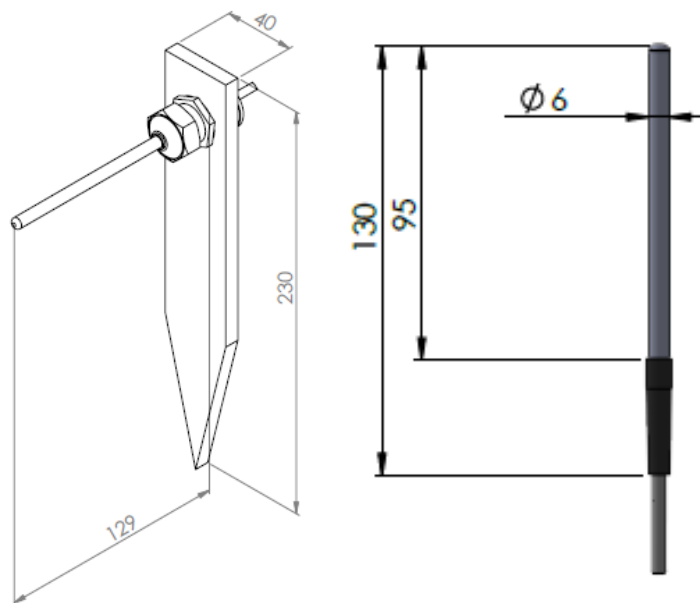
Resolution	<0.01°C (CAN-18 bit)
Accuracy	±0.1°C
Range of measurements	-40°C to +70°C
Sensitive element	Platinum wire
Platinum characteristics	80.31±0.05Ω (±0.06°C) @-50°C
	84.27±0.04Ω (±0.05°C) @-40°C
	92.16±0.04Ω (±0.04°C) @-20°C
	100.00±0.03Ω (±0.03°C) @0°C
	107.79±0.04Ω (±0.04°C) @+20°C
	115.54±0.04Ω (±0.05°C) @+40°C
	123±0.06Ω (±0.06°C) @+60°C
	153.58±0.08Ω (±0.1°C) @+140°C
Measurement principle	4 wires
Control unit interface	Binder M5
Protection class	IP67
Support	Plexiglass
Measuring height	+ 10 cm
Cable protection	Metal sheath

Data generated (WMO compliant)

Instantaneous temperature (°C)

Minimum temperature (°C)

*Data generated by the data logger P4-100



Accessories

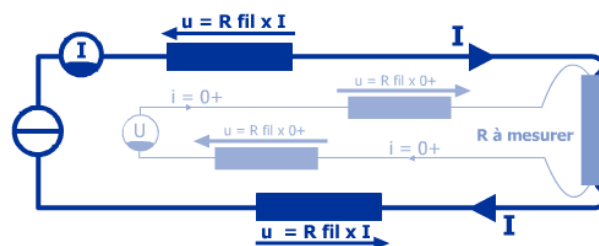
Accessories

- 1 Metal sheath to protect the cable
- 2 Square plug to enter the cable in the PULSIA structure



Wiring

Color	Description
Red	Wires of the Pt100 with the same potential
Blue	
Black	Wires of the Pt100 with the same potential
White	



Did you know that?

The 4 wires assembly allows to get rid of the unknown resistances induced by the cables and the connections in order to bring the best accuracy



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